

Permit Modification Request

Add Waste Containers

**Waste Isolation Pilot Plant
Carlsbad, New Mexico**

WIPP HWFP #NM4890139088-TSDF

Transmittal Letter

|



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

JUN 21 2002

Mr. Steve Zappe, Project Leader (WIPP)
Hazardous Waste Permits Program
Hazardous Waste Bureau
New Mexico Environmental Department
2905 E. Rodeo Park Dr., Bldg. 1
Santa Fe, New Mexico 87505-6303

RE: Request for Permit Modification to the Hazardous Waste Facility Permit, Permit Number NM4890139088-TSDF, Add Waste Containers

Dear Mr. Zappe:

The purpose of this letter is to submit a request for a permit modification to the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), Number: NM4890139088-TSDF. This request is being submitted by the U.S. Department of Energy, Carlsbad Field Office (CBFO) and Westinghouse TRU Solutions LLC. The proposed changes in this Permit Modification Request (PMR) do not compromise worker safety, human health, or the environment. The modification will add waste containers, including direct loaded 85-gallon drums, direct loaded Ten Drum Overpacks, and 100-gallon drums.

The Permittees are submitting this PMR in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42(d) for *other modifications*, and request that the NMED make a determination that the PMR be reviewed as a Class 2 modification. The Permittees believe that the proposed changes are very similar to other changes classified as Class 2 modifications in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42, Appendix I. Specifically, most of the proposed changes would be addressed by item F.2.a, *modification of a container unit without increasing the capacity of the unit*.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

If you have any questions regarding this modification, please contact Mr. Kerry Watson at (505) 234-7357 or Mr. Jody Plum at (505) 234-7462.

Sincerely,


Dr. Inés Triay, CBFO Manager
U.S. Department of Energy

 For
J. L. Lee, General Manager
Westinghouse TRU Solutions, LLC

Enclosure

Mr. Steve Zappe

-2-

cc: w/enclosure
C. Walker, Techlaw

cc: w/o enclosure
J. Bearzi, NMED
J. Kieling, NMED

Table of Contents

Transmittal Letter	
Table of Contents	i
Acronyms and Abbreviations	ii
Overview of the Permit Modification Request	1
Attachment A	A-1
Table 1. Hazardous Waste Facility Permit Modification	A-2
Item 1	A-3
Description	A-3
Basis	A-3
Discussion	A-3
Proposed Revised Permit Text	A-3
Attachment B	B-1

Acronyms and Abbreviations

CFR	Code of Federal Regulations
CH	Contact Handled
DOT	U. S. Department of Transportation
HEPA	High Efficiency Particulate Air (filter)
HWDU	Hazardous Waste Disposal Unit
HWFP	Hazardous Waste Facility Permit
MgO	Magnesium Oxide
NE	Northeast
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
PMR	Permit Modification Request
RCRA	Resource Conservation Recovery Act
SWB	Standard Waste Box
TDOP	Ten Drum Overpack
TRAMPAC	TRUPACT-II Authorized Methods for Payload Control
TRU	Transuranic
TRUDOCK	TRUPACT-II Unloading Dock
TRUPACT-II	Transuranic Package Transporter, Type II
WHB	Waste Handling Building
WIPP	Waste Isolation Pilot Plant
WWIS	WIPP Waste Information System

Overview of the Permit Modification Request

This document contains a Permit Modification Request (**PMR**) for the Hazardous Waste Facility Permit (**HWFP**) at the Waste Isolation Pilot Plant (**WIPP**), Permit Number NM4890139088-TSDF hereinafter referred to as the WIPP HWFP.

This PMR is being submitted by the U.S. Department of Energy, Carlsbad Field Office and Westinghouse TRU Solutions LLC, collectively referred to as the Permittees, in accordance with the WIPP HWFP, Condition I.B.1 (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 of the Code of Federal Regulations (**CFR**) §270.42). The modification will add waste containers including direct loaded ten drum overpacks (**TDOP**), direct loaded 85-gallon containers, and 100-gallon containers. These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modification to the WIPP HWFP and related supporting documents are provided in this PMR. The proposed modification to the text of the WIPP HWFP has been identified using a double underline and a revision bar in the right hand margin for added information, and a ~~strikeout~~ font for deleted information. All direct quotations are indicated by italicized text. The following information specifically addresses how compliance has been achieved with the WIPP HWFP requirement, Permit Condition I.B.1 for submission of this PMR.

1. **20.4.1.900 NMAC (incorporating 40 CFR Subpart D), requires the applicant to describe the exact change to be made to the permit conditions and supporting documents referenced by the permit.**

The proposed modification contains a single proposed change that will allow the use of direct loaded TDOPs, direct loaded 85-gallon containers, and 100-gallon containers at the WIPP facility in addition to the currently permitted waste containers. The exact, proposed text changes are found in Attachment A of this PMR.

2. **20.4.1.900 NMAC (incorporating 40 CFR Subpart D), requires the applicant to identify the permit modification request classification.**

The Permittees are submitting the PMR in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42(d) for *other modifications*, and request that the NMED make a determination that the PMR be reviewed as a Class 2 modification. The Permittees believe that the proposed changes are very similar to other changes classified as Class 2 modifications in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270.42, Appendix I. Specifically, most of the proposed changes would be addressed by item F.2.a, *modification of a container unit without changing the capacity of the unit*. The following information supports the Permittees request to review this as a Class 2 modification in accordance with §270.42(b).

3. **20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(iii)), requires the applicant to explain why the modification is needed.**

The modification is needed to allow the use of direct loaded TDOPs, direct loaded 85-gallon drums, and 100-gallon containers for management of larger waste items that exceed the capacity of smaller containers.

4. **20.4.1.900 NMAC (incorporating 40 CFR §270.42 (b)(1)(iv)), requires the applicant to provide the applicable information required by 40 CFR §§270.13 through 270.21, 270.62 and 270.63.**

The regulatory crosswalk describes those portions of the WIPP HWFP that are affected by this PMR. Where applicable, regulatory citations in this modification reference Title 20, Chapter 4, Part 1, NMAC, incorporating the CFR, Title 40 (40 CFR Parts 264 and 270). 40 CFR §§270.16 through 270.22, 270.62, 270.63 and 270.66 are not applicable at WIPP. Consequently, they are not listed in the regulatory crosswalk table. 40 CFR §270.23 is applicable to the WIPP Hazardous Waste Disposal Units (**HWDUs**).

5. **20.4.1.900 NMAC (incorporating 40 CFR §270.11(d)(1) and 40 CFR §270.30(k)), requires any person signing under paragraph a and b must certify the document in accordance with 20.4.1.900 NMAC.**

The transmittal letter for this PMR contains the signed certification statement in accordance with Permit Condition I.F of the WIPP HWFP.

Regulatory Crosswalk

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.13		Contents of Part A permit application	Attachment O, Part A		✓
§270.14(b)(1)		General facility description	Attachment A		✓
§270.14(b)(2)	§264.13(a)	Chemical and physical analyses	Attachment B		✓
§270.14(b)(3)	§264.13(b)	Development and implementation of waste analysis plan	Attachment B		✓
	§264.13(c)	Off-site waste analysis requirements	Attachment B		✓
§270.14(b)(4)	§264.14(a-c)	Security procedures and equipment	Attachment C		✓
§270.14(b)(5)	§264.15(a-d)	General inspection requirements	Attachment D		✓
	§264.174	Container inspections	Attachment D	✓	
§270.23(a)(2)	§264.602	Miscellaneous units inspections	Attachment D		✓
§270.14(b)(6)		Request for waiver from preparedness and prevention requirements of Part 264 Subpart C	NA		
§270.14(b)(7)	264 Subpart D	Contingency plan requirements	Attachment F		✓
	§264.51	Contingency plan design and implementation	Attachment F	✓	
	§264.52 (a) & (c-f)	Contingency plan content	Attachment F		✓
	§264.53	Contingency plan copies	Attachment F		✓
	§264.54	Contingency plan amendment	Attachment F		✓
	§264.55	Emergency coordinator	Attachment F		✓
	§264.56	Emergency procedures	Attachment F	✓	
§270.14(b)(8)		Description of procedures, structures or equipment for:	Attachment E		✓
§270.14(b)(8) (i)		Prevention of hazards in unloading operations (e.g., ramps and special forklifts)	Attachment E	✓	
§270.14(b)(8) (ii)		Runoff or flood prevention (e.g., berms, trenches, and dikes)	Attachment E		✓
§270.14(b)(8) (iii)		Prevention of contamination of water supplies	Attachment E		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.14(b)(8) (iv)		Mitigation of effects of equipment failure and power outages	Attachment E		✓
§270.14(b)(8) (v)		Prevention of undue exposure of personnel (e.g., personal protective equipment)	Attachment E		✓
§270.14(b)(8) (vi) §270.23(a)(2)	§264.601	Prevention of releases to the atmosphere	Module II Module IV Attachment M2 Attachment N		✓
	264 Subpart C	Preparedness and Prevention	Attachment E		✓
	§264.31	Design and operation of facility	Attachment E		✓
	§264.32	Required equipment	Attachment E Attachment F		✓
	§264.33	Testing and maintenance of equipment	Attachment D		✓
	§264.34	Access to communication/alarm system	Attachment E		✓
	§264.35	Required aisle space	Attachment E		✓
	§264.37	Arrangements with local authorities	Attachment F		✓
§270.14(b)(9)	§264.17(a-c)	Prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes	Attachment E		✓
§270.14(b) (10)		Traffic pattern, volume, and controls, for example: Identification of turn lanes Identification of traffic/stacking lanes, if appropriate Description of access road surface Description of access road load-bearing capacity Identification of traffic controls	Attachment G	✓	
§270.14(b) (11)(i) and (ii)	§264.18(a)	Seismic standard applicability and requirements	Part B, Rev. 6 Chapter B		✓
§270.14(b) (11)(iii-v)	§264.18(b)	100-year floodplain standard	Part B, Rev. 6 Chapter B		✓
	§264.18(c)	Other location standards	Part B, Rev. 6 Chapter B		✓
§270.14(b) (12)	§264.16(a-e)	Personnel training program	Attachment H		✓
§270.14(b) (13)	264 Subpart G	Closure and post-closure plans	Attachment I & J		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.14(b)(13)	§264.111	Closure performance standard	Attachment I		✓
§270.14(b)(13)	§264.112(a)(b)	Written content of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(c)	Amendment of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(d)	Notification of partial and final closure	Attachment I		✓
§270.14(b)(13)	§264.112(e)	Removal of wastes and decontamination/dismantling of equipment	Attachment I		✓
§270.14(b)(13)	§264.113	Time allowed for closure	Attachment I		✓
§270.14(b)(13)	§264.114	Disposal/decontamination	Attachment I		✓
§270.14(b)(13)	§264.115	Certification of closure	Attachment I		✓
§270.14(b)(13)	§264.116	Survey plat	Attachment I		✓
§270.14(b)(13)	§264.117	Post-closure care and use of property	Attachment J		✓
§270.14(b)(13)	§264.118	Post-closure plan; amendment of plan	Attachment J		✓
§270.14(b)(13)	§264.178	Closure/containers	Attachment I		✓
§270.14(b)(13)	§264.601	Environmental performance standards-Miscellaneous units	Attachment I		✓
§270.14(b)(13)	§264.603	Post-closure care	Attachment I		✓
§270.14(b)(14)	§264.119	Post-closure notices	Attachment J		✓
§270.14(b)(15)	§264.142	Closure cost estimate	NA		✓
	§264.143	Financial assurance	NA		✓
§270.14(b)(16)	§264.144	Post-closure cost estimate	NA		✓
	§264.145	Post-closure care financial assurance	NA		✓
§270.14(b)(17)	§264.147	Liability insurance	NA		✓
§270.14(b)(18)	§264.149-150	Proof of financial coverage	NA		✓
§270.14(b)(19)(i), (vi), (vii), and (x)		Topographic map requirements Map scale and date Map orientation Legal boundaries Buildings Treatment, storage, and disposal operations Run-on/run-off control systems Fire control facilities	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.14(b)(19)(ii)	§264.18(b)	100-year floodplain	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iii)		Surface waters	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iv)		Surrounding Land use	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(v)		Wind rose	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(viii)	§264.14(b)	Access controls	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(ix)		Injection and withdrawal wells	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xi)		Drainage on flood control barriers	Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xii)		Location of operational units	Part B, Rev. 6 Chapter B		✓
§270.14(b)(20)		Other federal laws Wild and Scenic Rivers Act National Historic Preservation Act Endangered Species Act Coastal Zone Management Act Fish and Wildlife Coordination Act Executive Orders	Part B, Rev. 6 Chapter K		✓
§270.15	§264 Subpart I	Containers	Attachment M1	✓	
	§264.171	Condition of containers	Attachment M1	✓	
	§264.172	Compatibility of waste with containers	Attachment M1		✓
	§264.173	Management of containers	Attachment M1	✓	
	§264.174	Inspections	Attachment D Attachment M1		✓
§270.15(a)	§264.175	Containment systems	Attachment M1		✓
§270.15(c)	§264.176	Special requirements for ignitable or reactive waste	Attachment E Permit Module II		✓
§270.15(d)	§264.177	Special requirements for incompatible wastes	Attachment E Permit Module II		✓
	§264.178	Closure	Attachment I		✓
§270.15(e)	§264.179	Air emission standards	Attachment E Attachment N		✓
§270.23	264 Subpart X	Miscellaneous units	Attachment M2		✓
§270.23(a)	§264.601	Detailed unit description	Attachment M2	✓	
§270.23(b)	§264.601	Hydrologic, geologic, and meteorologic assessments	Permit Module IV Attachment M2		✓

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.23(c)	§264.601	Potential exposure pathways	Permit Module IV Attachment M2 Attachment N		✓
§270.23(d)		Demonstration of treatment effectiveness	Permit Module IV Attachment M2 Attachment N		✓
	§264.602	Monitoring, analysis, inspection, response, reporting, and corrective action	Permit Module IV Attachment M2 Attachment N		✓
	§264.603	Post-closure care	Attachment J Attachment J1		✓
	264 Subpart E	Manifest system, record keeping, and reporting	Permit Module I Permit Module II Permit Module IV Attachment B		✓

Attachment A

Description of the Permit Modification Request

Table 1. Hazardous Waste Facility Permit Modification

No.	Affected Permit Section	Item	Category	Attachment 1 Page #
1	a. Module III b. Module IV c. Attachment D d. Attachment E e. Attachment F f. Attachment G g. Attachment M1 h. Attachment M2	Add waste containers	F.2.a	A-3

Item 1

Description:

This modification will allow the use of direct loaded ten drum overpacks (TDOP), direct loaded 85-gallon drums, and 100-gallon drums in addition to the currently permitted containers for waste management at the Waste Isolation Pilot Plant (WIPP). With the addition of direct loaded 85-gallon drums, other permit references specifying that 85-gallon drums are limited to overpacks have been modified accordingly. In addition, this modification clarifies that four 4-packs of 85-gallon drums will fit on a facility pallet.

Basis:

Generator/storage sites have requested the capability to utilize these additional containers for waste that will be shipped to WIPP. Addition of these containers will facilitate packaging at the generator/storage sites by accommodating some of the larger debris waste items that exceed the capacity of a 55-gallon drum.

Some portions of the WIPP HWFP stated that two 4-packs of 85-gallon drums will fit on a facility pallet, whereas other text states that four 4-packs of 85-gallon drums will fit on a facility pallet. This modification clarifies that four 4-packs of 85-gallon drums will fit on a facility pallet.

Some portions of the WIPP HWFP stated that containers determined not to be in good condition would be overpacked, whereas other text states that containers not in good condition or leaking would be overpacked, repaired/patched, or transferred to a container in good condition. This modification clarifies that containers not in good condition will be overpacked, repaired/patched, or transferred to a container in good condition.

Discussion:

The containers proposed for addition will meet the U.S. Department of Transportation shipping container regulations (49 CFR §173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR §178 - Specifications for Packaging), consistent with the requirements for other currently permitted containers.

The facility pallet has two locations for payload assemblies, which may be stacked two high. This will allow for placement of a total of four 4-packs of 85-gallon drums on the facility pallet. Four 4-packs will have a maximum gross weight of 18,000 lbs, which when added to the facility pallet weight of 4,120 lbs does not exceed the maximum facility pallet capacity of 25,000 lbs.

Note that direct loaded 85-gallon drums are not currently approved as payload containers for use in accordance with the *TRUPACT-II Authorized Methods for Payload Control* (TRAMPAC), Revision 19. Approval of this modification will allow generator sites to begin direct loading these containers; however, they will not be shipped to WIPP until the TRAMPAC is revised.

Proposed Revised Permit Text:

a. 1. Module III, Table of Contents

III.C.	CONDITION OF CONTAINERS	III-3
III.C.1.	Acceptable Storage Containers	III-3
III.C.1.a.	Standard 55-gallon (208-liter) drum	
III.C.1.b.	Standard waste box (SWB)	
III.C.1.c.	Ten-drum overpack (TDOP)	
III.C.1.d.	85-gallon (322-liter) drum overpack	
III.C.1.e	<u>100-gallon (379-liter) drum</u>	
III.C.2.	Derived Waste Containers	III-4

a.2. Module III.C.1.a

The Permittees shall use containers that comply with the requirements for U.S. Department of Transportation shipping container regulations (49 CFR §173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR §178 - Specifications for Packaging) for storage of TRU mixed waste at WIPP. The Permittees are prohibited from storing TRU mixed waste in any container not specified in Permit Attachment M1, Section M1-1b, as set forth below:

III.C.1.a Standard 55-gallon (208-liter) drum - with a gross internal volume of 7.3 ft³ (0.21 m³).

III.C.1.b Standard waste box (SWB) - with a gross internal volume of 66.3 ft³ (1.88 m³).

III.C.1.c Ten-drum overpack (TDOP) - with a gross internal volume of 160 ft³ (4.5 m³). TDOPs may be used to ~~with a capacity to~~ contain up to ten standard 55-gallon drums or one SWB. TDOPs may be direct loaded or used to overpack drums or SWBs containing CH TRU mixed waste.

III.C.1.d 85-gallon (322-liter) drum ~~overpack~~ - with a gross internal volume of up to 11.3 ft³ (0.32 m³). 85-gallon drums ~~overpacks~~ may be direct loaded or used for overpacking ~~contaminated~~ 55-gallons drums containing CH TRU mixed waste and for collecting and storing derived waste.

III.C.1.e 100-gallon (379-liter) drum - with a gross internal volume of 13.4 ft³ (0.38m³). 100-gallon drums may be direct loaded with CH TRU mixed waste.

b.1. Module IV, Table of Contents

IV.C.	DISPOSAL CONTAINERS	IV-2
IV.C.1.	Acceptable Disposal Containers	IV-2
IV.C.1.a.	Standard 55-gallon (208-liter) drum	
IV.C.1.b.	Standard waste box (SWB)	
IV.C.1.c.	Ten-drum overpack (TDOP)	
IV.C.1.d.	85-gallon (322-liter) drum overpack	
<u>IV.C.1.e</u>	<u>100 gallon (379-liter) drum</u>	
IV.C.2.	Condition of Containers	IV-2

b.2. Module IV.C.1

IV.C.1 Acceptable Disposal Containers

The Permittees shall use containers that comply with the requirements for U.S. Department of Transportation shipping container regulations (49 CFR §173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR §178 - Specifications for Packaging) for disposal of TRU mixed waste at WIPP. The Permittees are prohibited from disposing TRU mixed waste in any container not specified in Permit Attachment M1, Section M1-1b, as set forth below:

IV.C.1.a Standard 55-gallon (208-liter) drum - configured as a 7-pack or as an individual unit.

IV.C.1.b Standard waste box (SWB) - as an individual unit.

IV.C.1.c Ten-drum overpack (TDOP) - as an individual unit.

IV.C.1.d 85-gallon (322-liter) drum ~~overpack~~ - configured as a 4-pack or as an individual unit.

IV.C.1.e 100 gallon (379-liter) drum - configured as a 3-pack or as an individual unit.

c.1. Attachment D, Section D-1b(1)

Containers are used to manage TRU mixed waste at the WIPP facility. These containers are described in Permit Module III. Off-site CH TRU mixed waste will arrive in 55-gallon drums arranged as seven (7)-packs, ~~as in~~ Ten Drum Overpacks (TDOP), in 85-gallon drums arranged as four (4) packs, in 100-gallon drums arranged as three (3) packs, or ~~as in~~ standard waste boxes (SWB). The waste containers will be visually inspected to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. This visual inspection shall not include the center drums of 7-packs and waste containers positioned such that visual observation is precluded due to

the arrangement of waste assemblies on the facility pallets. If waste handling operations should stop for any reason with containers located on the TRUPACT-II Unloading Dock (**TRUDOCK** storage area of the WHB Unit) in the TRUPACT-II shipping containers, primary waste container inspections could not be accomplished until the containers of waste are removed from the shipping containers.

d.1. Attachment E, Section E-1b

20.4.1.500 NMAC (incorporating 40 CFR §264.35), requires that a facility maintain sufficient aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to areas of the facility during an emergency (other than a permanent disposal stack). Aisle space for each regulated unit is specified below.

Waste Handling Building Container Storage Unit (**WHB Unit**) and Parking Area Container Storage Unit (**Parking Area Unit**)

During TRU mixed waste handling operations, sufficient room is maintained for unobstructed movement of personnel, fire-protection equipment, spill control equipment, or decontamination equipment to areas in the WHB Unit.

Waste containers will remain inside the TRUPACT-II shipping containers in the Parking Area Unit until TRU mixed waste handlers are prepared to handle them. As shown in Figure M1-1 in Permit Attachment M1, there is ready access to all areas within the WHB Unit where hazardous wastes are handled. Waste containers ~~Seven-packs and/or SWBs~~ are unloaded from the TRUPACT-II shipping container in to the WHB Unit (see Figure M1-12 in Permit Attachment M1). The WHB Unit can handle the unloading of four TRUPACT-II shipping containers at one time.

At all times, written procedures ensure that loaded TRUPACT-II containers, facility pallets, and waste containers ~~7-packs, SWBs, 85-gallon overpacks, TDOPs, or canisters~~ are managed in the WHB Unit in a manner to prevent obstructing the movement of personnel, fire-protection equipment, spill-control equipment, and decontamination equipment. An aisle space of 44 in. (1.1 m) between loaded facility pallets will be maintained in all waste storage areas of the WHB Unit, and a minimum of 4 ft of isle space will be maintained between TRUPACT-IIs in the outdoor Parking Area Unit.

d.2 Attachment E, Section E-2a

The WIPP facility's equipment, structures, and procedures are specially designed for the safe handling of TRU mixed waste. Permit Attachments M1 and M2 detail how contact-handled (**CH**) TRU mixed waste is handled, including unloading and transport operations. The following is a summary of the activities, structures, and equipment that were developed to prevent hazards in unloading of TRU mixed waste, as required by 20.4.1.900 NMAC (incorporating 40 CFR §270.14(b)(8)(i)).

The TRUPACT-II shipping container has a gross loaded weight of 19,265 lbs (8,737 kgs). The TRUPACT-II shipping container has forklift pockets at the bottom of the container specifically for lifting the container with a forklift (see Figure M1-8 in Permit Attachment M1). The 13 ton (11.8 metric tons) electric forklift unloads the TRUPACT-II from the trailer and transfers it to an unloading dock in the WHB Unit (see Figure M1-9 in Permit Attachment M1). The unloading dock is designed to accommodate the TRUPACT-II container and functions as a work platform, providing TRU mixed waste handling and health physics personnel with easy access to the container during unloading operations.

An overhead 6-ton (5.4-metric ton) crane and adjustable center-of-gravity lift fixture transfer TRU mixed waste containers from the TRUPACT-II to the facility pallet on the WHB Unit floor. The facility pallet is a fabricated steel structure designed to securely hold waste containers. Each facility pallet has a rated load capacity of 25,000 lb (11,340 kg). The upper surface of the facility pallet has two recesses sized to accept the waste containers, ensuring that the containers are held in place. Up to four SWBs, four 7-packs of 55-gallon drums, ~~four two~~ 4-packs consisting of 85-gallon drums overpacks, four 3-packs of 100-gallon drums, or two TDOPs may be placed on a facility pallet. Each stack of waste containers is strapped down to holding bars in the top reinforcement plate of the facility pallet to avoid spillage during movement. Two rectangular tube openings in the bed allow the facility pallet to be securely lifted by forklift. In order to assure a facility pallet is not overloaded, operationally it will hold the contents of two TRUPACT-IIs, Permit Attachment M1.

e.1. Attachment F, Section F-1

Description of Containers

CH TRU mixed waste containers will be either 55-gallon (gal) (208-liter (L)) drums singly or arranged into seven (7)-packs, 85-gal (321-L) drums ~~(used as overpacks)~~ singly or arranged into four (4)-packs, 100-gal (379 L) drums singly or arranged into three (3)-packs, ten-drum overpacks (**TDOP**), or 66.3 ft³ (1.88 m³) SWBs.

CH Bay Operations

The typical processing rate for CH waste is 14 TRUPACT-IIs per day, and the maximum is 28 per day. Two shifts per day are planned; four days per week. The fifth day is for equipment maintenance with weekends available for more extensive maintenance, when necessary.

Once unloaded from the TRUPACT-IIs, CH waste containers (7-packs of 55-gal drums, 3-packs of 100-gal drums, 4-packs of 85-gal drums, SWBs, or TDOPs) are placed in one of two positions on the facility pallet. The waste containers ~~7-packs or SWBs~~ are stacked, ~~as they arrive in the TRUPACT-II~~, on the facility pallets (one- or two-high, depending on weight considerations). The use of facility pallets will elevate the waste

approximately 9.5 inches (in.) (24 centimeters [cm]) from the floor surface. Pallets of waste will then be relocated to the northeast area of the CH bay for normal storage. This storage area will be clearly marked to indicate the lateral limits of the storage area. This storage area will have a maximum capacity of seven facility pallets of waste during normal operations. These pallets will typically be staged in this area for a period of up to five days.

e.2. Attachment F, Section F-4d

Control of Spills or Leaking or Punctured Containers of CH TRU Mixed Waste

Should a breach of a waste container occur at the WIPP that results in external contamination exceeding the small area "spot" decontamination levels, the affected container(s) (e.g., breached and contaminated) will be placed into an available overpack container (e.g., 85-gal drum, SWB, TDOP), except that TDOP's will be decontaminated, and repaired/patched or transferred to a container in good condition. The decontamination of equipment and the overpacking of contaminated/damaged waste containers will be performed in the vicinity of the incident. For example, under normal operations waste will be handled only in the areas of the WHB Unit. Therefore, it is within these same areas that decontamination and/or overpacking operations would occur. By eliminating the transport of contaminated equipment to other areas for decontamination or overpacking, the risk of spreading contamination is reduced.

e.3. Attachment F, Table F-6

**TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT**

Equipment	Description and Capabilities	Location
Communications		
Building Fire Alarms	Manual pull stations and automatic devices (sprinkler system flow, and smoke and thermal detectors) trigger fire alarm; locally visible and audible; visual display and alarm in Central Monitoring Room (CMR)	Guard and Security Building, Pumphouse, Warehouse/Shops, Exhaust Filter Building, Support Building, CMR/ Computer Room, Waste Handling Building, TRUPACT Maintenance Facility, SH Hoisthouse, Maintenance Shops, Guard Shack*, Auxiliary Warehouse, Core Storage Building, Engineering Building, Training Facility, Safety Building, Maintenance Shop, Hazardous Waste Storage (non-TRU) Area (Facility 474) *local alarms; not connected to the CMR

TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT

Equipment	Description and Capabilities	Location
Underground Fire Alarms	Automatic/Manual; have priority over other paging channel signals but not override intercom channels; alarms sound in the general area of the control panel and are connected to the underground evacuation alarms; they also interface with the CMR.	Fire detection and control panel locations: Waste Shaft Underground Station, SH Shaft Underground Station, Panel 1 (outside room 1), E-O/N-1200, Fuel Station
Site-wide Evacuation Alarm	Transmitted over paging channel of the public address system, overriding its normal use; manually initiated according to procedures requiring evacuation; audible alarm produced by tone generator at 10 decibels above ambient noise level (or at least 75 decibels); flashing strobe lights; radios and/or pagers are used to notify facility personnel outside alarm range. Monthly test are performed on the PA, site notification alarms, and plectrons.	Site-wide
Vehicle Siren	Manual; oscillating; emergency services/surface response vehicles, is mechanical and electronic.	WIPP surface emergency vehicles
Public Address System	Includes intercom phones; handset stations and loudspeaker assemblies, each with own amplifiers; multichannel, one for public address and pages, and others for independent party lines.	Surface and underground
Intraplant Phones	Private automatic branch exchange; direct dial; provide communication link between surface and underground operations	Throughout surface and underground
Mine Page Phones	Battery-operated paging system	CMR, Mine Rescue Room, EOC, lamproom, underground at S550/W30, S100/W30, S1950/E140, SH Shaft Collar and Underground Station, Waste Shaft Collar and Underground Station, FSM desk.
Emergency Pagers	Manual; , intermittent alarm signals	Issued to appropriate emergency personnel
Plectrons	Tone-alert radio receivers placed in areas not accessible by the public address system	Site-wide
Portable Radios	Two-way, portable; transmits and monitors information to/from other transmitters	Issued to individuals

TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT

Equipment	Description and Capabilities	Location
Plant Base Radios	Two-way, stationary, VHF-FM; linked to Eddy County Sheriff Department, NM State Police, and Otis Fire Department), and WIPP Channels 1-18 (Communication with the Lea County Sheriff's Department, the Hobbs Fire Department, Carlsbad Medical Center and Lea Regional Hospital is available via the Eddy County dispatcher) (Site Security, Site Operations and Site Emergency, maintenance, repeater to Carlsbad) Wireless communications such as cellular telephones may be used to contact the Eddy County emergency responders.	Various site locations
Mobile Phones	Provide communications link between WIPP Security and key personnel	Issued to individuals plus emergency vehicles,
Spill Response		
SPILL-X-S Guns and Recharge Powder	Containment; (1)SPILL-X model SC-30-C(Gun) (1)SPILL-X model XC-30-S(Gun) (1)SPILL-X model SC-30-A(Gun); (1) A-Acid, 5 gallon bucket (Recharge Powder) (1)S-Solvent, 5 gallon bucket (Recharge Powder) (1)C-Caustic, 5 gallon bucket (Recharge Powder)	HAZMAT trailer
Absorbent Sheets	Containment or cleanup; (1) 3' x 100' Sheet	HAZMAT trailer
Absorbents	Grab and Go container; spill control bucket; (1) for solvents and neutralizing absorbents; 5 gallon bucket (1) for acids/caustics; 5 gallon bucket	HAZMAT trailer
Absorbent Material	Containment or cleanup; (1) 100 ft. rolled or equivalent socks " Pig" for general liquid (1) 100 ft. rolled or equivalent socks " Pig" for oil	HAZMAT trailer
Air Bag System	Extrication, Stabilization, Cribbing (1) bag system with tank kit and the following bag sizes: (1)12-ton, (1) 21.8-ton, (1)17-ton	Surface rescue truck
Air Chisel	Extrication (1) Capable of cutting 3/16" steel	Surface rescue truck
Drum Transfer Pumps and Drum Opener	Containment or cleanup; (1) unit for chemical transfer (1) hand operated pump for petroleum transfer (1) drum opener	HAZMAT trailer
Floor Squeegee	Containment or cleanup; (1) straight rubber blade, nonwood handle	HAZMAT trailer

**TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT**

Equipment	Description and Capabilities	Location
Foam Concentrate	AFFF 6% (4) 5-gallon pail	Fire truck # 1
Gas Cylinder Leak Control Kit	(1)Series A Hazardous Material Response Kit; contains nonsparking equipment to control and plug leaks	HAZMAT trailer
Portable Generator	(1)Backup power; 5,000 watt; 120 or 240 volt	Surface rescue truck
Hand Tools	Containment and cleanup; Underground rescue truck: (1)12# Sledge Hammer (1)3/8" Drive Socket Set (1)1/2" Drive Socket Set (1)3/4" Drive Socket Set (1)25' 1/2" Chain (1)6' Wrecking Bar (1)Bottle Jack (1)4# Hammer (1)18" Crescent Wrench (1)5' Pry Bar (1)2' Pry Bar (1)100' Extension Cord (1)4' Nylon Sling (1)6' Nylon Sling (1)10' Nylon Sling These tools are located in the HAZMAT Trailer. They are non-sparking. (1)14"L adjustable pipe wrench (1)15" multi-opening bung wrench (1)hammer/crate opener (1)8" pipe pliers (1)8" blade Phillips (1)#2 screwdriver (1)6" blade standard screwdriver (1)Claw Hammer	Underground rescue truck, HAZMAT trailer
Come-a-longs	(1) 4-ton; cable-type Ratchet lever tool designed specifically for lifting, lowering and pulling applications including jobs requiring rigging, positioning, and stretching. Used in rescue for extrication.	Surface rescue truck and underground rescue truck
Porta-power	(1) 10-ton hydraulic, hand-powered jaws used for extrication during rescues.	Surface rescue truck
Jugs	Containment or cleanup; (4) 1-gallon plastic	HAZMAT trailer
Pails	Containment or cleanup; (3) 5-gallon plastic with lid	HAZMAT trailer
Portable Lighting	(1) Emergency lighting system; 120 volts; 500-watt bulbs, suitable for wet location	Underground rescue truck

TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT

Equipment	Description and Capabilities	Location
Patching Kit	Series A Hazardous Response Kit; Class A; contains nonsparking equipment to control and plug leaks.	HAZMAT trailer
Scoops and Shovels	Cleanup; plastic; various sizes; nonsparking; nonwood handles (1) Scoop (3) Shovels	HAZMAT trailer
Medical Resources		
Ambulance #1	Equipped as per Federal Specifications KKK-A-1822 and New Mexico Emergency Medical Services Act General Order 35; equipped with a radio to Carlsbad Medical Center, VHF radio, UHF medical frequency, cellular phone	Surface (Safety and Emergency Services Facility)
Ambulance #2	Diesel hardcab ambulance equipped with first aid kit, 2 stretchers, and other associated medical supplies	Underground
Rescue Truck	Special purpose vehicle; light and heavy duty rescue equipment; transports 1 litter patient, medical oxygen and supplies for mass casualties, fire suppression support equipment (rescue tool, air bag, K-12 Rescue Saw, 5,000-watt generator, self-contained breathing apparatus (SCBA), and much more equipment	Surface (Safety and Emergency Services Facility)
Fire Detection and Fire Suppression Equipment		
Building Smoke, Thermal Detectors, or Manual Pull Stations	Ionization and photoelectric or fixed temperature/rate of rise detectors; visual display and alarm in CMR; manual pull stations. The underground has manual fire alarm pull stations located where personnel have access when evacuating. These are connected to the U/G evacuation alarm.	Guard and Security Building, Warehouse/Shops, Support Building, CMR/Computer Room, Waste Handling Building, TRUPACT Maintenance Facility, Waste Shaft Collar, Underground Fuel Station, SH Hoisthouse, Engineering Building, Industrial Safety Building, Training Facility
Fire Truck # 1	Equipped per Class "A" fire truck per NFPA; capacity 750 gallons, with pump capacity of 1200 gallons per minute	Surface (Safety and Emergency Services Facility)
Rescue Truck # 2 (U/G)	(1) 125-pound dry chemical extinguisher (1) 150-pound foam extinguisher	Underground
Extinguishers	Individual fire extinguisher stations; various types located throughout the facility, conforming to NFPA-10.	Buildings, underground, and underground vehicles
Automatic Dry Chemical Extinguishing Systems	Automatic; 1,000-pound system (Purple K); actuated by thermal detectors or by manual pull stations	Underground fuel station

**TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT**

Equipment	Description and Capabilities	Location
Sprinkler Systems	Fire alarms activated by water flow	Pumphouse, Guard and Security Building, Support Building, Waste Handling Building (contact- transuranic waste area only), Warehouse/Shops Building, Auxiliary Warehouse Building, TRUPACT Maintenance Facility, Training Facility, SH Shaft Hoisthouse, Exhaust Filter Building, Engineering Building, and Safety Building
Water Tanks, Hydrants	Fire suppression water supply; one 180,000-gallon capacity tank, plus a second tank with 100,000 gallon reserve	Tanks are at southwestern edge of WIPP facility; pipelines and hydrants are throughout the surface
Fire Water Pumps	Fire suppression water supply; 125 pounds per square inch, 1,500 gallons per minute centrifugal pump, one with electric motor drive, the other with diesel engine; pressure maintenance pump	Pumphouse
Fire Hose Connections	Fire suppression water supply	Pumphouse, Guard and Security Building, Support Building, Waste Handling Building (contact-transuranic waste area only), Warehouse/Shops Building, Auxiliary Warehouse Building, TRUPACT Maintenance Facility, Engineering Building, Exhaust Filter Building
Personal Protection Equipment		
Headlamps	Mounted on hard hat; battery operated	Each person underground
Underground Self-Rescuer Units	Short-term rebreathers; approximately 300	Each person underground
Self-Contained Breathing Apparatus (SCBA)	Oxygen supply; 4-hour units; approximately 14 Mine Rescue Team Draeger units	Mine Rescue Training Room
Chemical and Chemical-Supported Gloves	Body protection; (12 pair) inner-cloth, (12 pair) outer-pvc, (5 pair) outer-viton	HAZMAT trailer
Suit, Acid	Body protection; (4) acid	HAZMAT trailer
Suit, Fully Encapsulated	Body protection; used with SCBAs; full outerboot; (4) Level A; (4) Level B	HAZMAT trailer

TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT

Equipment	Description and Capabilities	Location
Emergency Medical Equipment		
Antishock Trousers	Shock treatment; (2) inflatable, one on each ambulance	Ambulance # 1 and # 2
Zoll 1600 Heart Monitor/defibrillator	Heart Monitor/defibrillator	Ambulance # 1 and # 2
Oxygen	Patient care; Size D: (2) Ambulance #1 (1) Underground Ambulance (1) Health Services Size E: (1) Rescue Truck (2) Underground Ambulance Size M: (1) Ambulance #1	Ambulance # 1 and # 2, surface rescue truck
Resuscitators (Bag)	Disposable bag resuscitation Ambulance #1: (2) adult size (1) child size Underground Ambulance: (2) adult size	Ambulance # 1, Ambulance # 2
Splints	Immobilize limbs; (1) Adult traction splint, lower extremity, with limb-supporting slings, padded ankle hitch and traction device per ambulance. (2) Rigid splinting devices or equivalents, suitable for immobilization of upper extremities per ambulance. (2) Rigid splinting devices or equivalents, suitable for the immobilization of lower extremities. (1) Set of Airsplints: 6 assorted splints; hand/wrist, half arm, full arm, foot/ankle, half leg, and full leg per miner's aid stations.	Ambulance # 1 and # 2, Miner's Aid Stations
Stretchers	Patient transport; (2) Spine Boards, one short and one long, with nylon straps per ambulance. (also used to perform cardiopulmonary resuscitation) (2) Emergency Stretchers or scoops, or combination per ambulance (1) All-purpose multi-level ambulance stretch (gurney), with 3 safety straps and locking mechanism per ambulance. (1) Stretcher in each miner's aid station.	Various combinations in Ambulance # 1 and # 2, Miner's Aid Station
Suctions	For medical emergencies: Portable (1) Suction unit, capable of delivering at least 300 mm. HG on each ambulance.	Ambulances #1 and #2

TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT

Equipment	Description and Capabilities	Location
Trauma Kits	(1) adult blood pressure cuff and stethoscope (4) soft-roller bandages (3) triangular bandages (1) pkg. band-aids (2) trauma dressings (25) 4X4 sponges (1) roll adhesive tape (1) bite stick (1) penlight (1) sterile burn sheet (1) oropharyngeal airway (1) glucose substance (2) sterile gauze dressings	(1) kit in each: Ambulances #1 and #2, surface rescue truck
Miner's Aid Station	For First Aid Stations in the Underground (1) Stretcher--as referenced above per station (1) Set of airsplints--as referenced above per station (1) Blanket per station (1) Box of latex gloves (50) per station (5) Pathogen Wipes per station (1) First Aid Kit (24) per station; includes, (3) Band-Aid Combo Paks (2) Swabs, PVP (1) Antibiotic Ointment (1) Sting-Kill Swab (2) Dressing, compresses (2) Roller Bandages (2) Tape (2) Triangle Bandage (1) Eyedressing Pak (1) Burn Dressing (1) Ammonia Inhalants (1) User Log Sheet	Miner's Aid Stations- Various Underground Locations

TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT

Equipment	Description and Capabilities	Location
First Aid Supplies	According to General Order #35 (12) bandages, soft roller, self-adhering type--4" or 6" x 5 yards. (6) triangular bandages, 40" (1) box band-aids (1) 1 pair bandage shears (6) Trauma dressings, 30" x 10" (6) Trauma dressings, 5" x 7" (50) 4" x 4" sponges, individually wrapped and sterile (2) rolls adhesive tape (1) penlight (2) sterile burn sheets (2) oropharyngeal airways -- adult (2) oropharyngeal airways -- child (Ambulance #1 only) (2) oropharyngeal airways -- infant (Ambulance #1 only) (1) Glucose substance (3) Occlusive dressings (1) Roll aluminum foil (6) Rigid cervical collars--2 each small, medium and large sizes (4) Cold packs (4) Heat packs (2) Bite sticks	Ambulance #1
First Aid Supplies	(2) Transfer sheets (2) Blankets	Ambulances #1 and #2
First Aid Supplies	(2) #16g angiosets (2) #18g angiosets (2) #20g angiosets (1) 1000cc LR IV fluid (1) 500cc NS IV fluid	Ambulances #1 and #2, surface rescue truck
General Plant Emergency Equipment		
Emergency Lighting	For employee rescue and evacuation, and fire/spill containment; linked to main power supply, and selectively linked to back up diesel power supply and/or battery-backed power supply	Surface and underground
Backup Power Sources	Two diesel generators, and battery-powered uninterruptible power supply (UPS); use limited to essential loads; manual or remote starting 1,100-kilowatt diesel generators with on-site fuel for 62% load for 3 days for selected loads; 30-minute battery capacity for essential loads	Generators are east of Safety and Emergency Services Building; UPS is located at the essential loads
Hoists	Hoists in Waste Shaft, Air Intake Shaft, and SH Shaft	Waste Shaft, Air Intake Shaft, SH Shaft
Radiation Monitoring Equipment	(5) Portable alpha and beta survey meters, portable air samplers, and portable continuous air monitors	Building 412
Emergency Shower	For emergency flushing of contaminated individual	Surface

**TABLE F-6
EMERGENCY EQUIPMENT MAINTAINED
AT THE WASTE ISOLATION PILOT PLANT**

Equipment	Description and Capabilities	Location
Eye Wash Fountains	For emergency flushing of affected eyes	Various locations on surface and in the underground
Decon Shower Equipment	Self-contained decon shower trailer, portable decon shower unit, disposable decon shower	Surface
Overpack containers	14-85 Gallon drums 4-SWBs <u>1-TDOP</u>	Building 481 Building 481 <u>Building 481</u>
HEPA Vacuums	2 HEPA Vacuums to be utilized for removal of contamination.	Building 481
Aquaset or Cement	100 lbs. of aquaset or cement material for solidification of liquid waste generated as a result of fire fighting water or decontamination solutions.	Building 481
Polyvinyl Alcohol or Paint	1 - 5 gallon bucket of approved fixative to be used during recovery.	Building 481
TDOP Upender	Upender facilitates overpacking standard waste boxes	Building 481
Non hazardous Decontaminating Agents	4-1 Gallon bottles for decontamination of surfaces, equipment, and personnel	Building 481

f.1. Attachment G, Section G-1

Waste Handling Building Traffic

CH TRU mixed waste will arrive by tractor-trailer at the WIPP facility in sealed shipping containers (e.g., TRUPACT-IIs). Upon receipt, security checks, radiological surveys, and shipping documentation reviews will be performed. A forklift will remove the TRUPACT-IIs and transport them a short distance through an air lock that is designed to maintain differential pressure in the WHB. The forklift will place the shipping containers at one of the two TRUPACT-II unloading docks (TRUDOCK) inside the WHB.

The TRUPACT-II may hold up to two seven(7)-packs, two four(4)-packs, two three(3)-packs, two standard waste boxes (SWB), or one ten-drum overpack (TDOP). A six-ton overhead bridge crane will be used to remove the contents of the TRUPACT-II. Waste containers will be surveyed for radioactive contamination and decontaminated or returned to the TRUPACT-II as necessary.

Each facility pallet will accommodate four seven(7)-packs of 55-gallon drums, four SWBs, four four(4)-packs of 85-gallon drums, four three(3)-packs of 100-gallon drums, two TDOPs, or any combination thereof. Waste containers will be secured to the facility pallet prior to transfer. A forklift will transport the loaded facility pallet to the conveyance loading car inside the air lock at the Waste Shaft (Figure G-3). The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed out.

g.1. Attachment M1, List of Figures

M1-1	Waste Handling Building - Container Storage Unit
M1-2	Parking Area - Container Storage Unit
M1-3	Standard 55-Gallon Drum (Typical)
M1-4	Standard Waste Box
M1-5	Ten-Drum Overpack
M1-6	85-Gallon <u>Drum Overpack</u>
M1-7	Waste Handling Building - Facility Pallet Temporary Storage Area
M1-8	TRUPACT-II Shipping Container for CH Transuranic Mixed Waste (Schematic)
M1-9	Configuration of Contact-Handled Transuranic Mixed Waste Unloading Docks in the Waste Handling Building
M1-10	Facility Pallet for Seven-Pack of Drums
M1-11	Conveyance Loading Car with Seven-Packs and Facility Pallet
M1-12	TRUPACT-II Containers on Trailer
M1-13	WIPP Facility Surface and Underground CH Transuranic Mixed Waste Process Flow Diagram
M1-14	Waste Handling Building Plan (Ground Floor)
<u>M1-15</u>	<u>100-Gallon Drum</u>

g.2. Section M1-1b

Description of Containers

20.4.1.500 NMAC (incorporating 40 CFR §264.171) requires that containers holding waste be in good condition. Waste containers shall be in good condition prior to shipment from the generator sites, i.e., containers will be of high integrity, intact, and free of surface contamination above DOE limits. The Manager of the DOE Carlsbad Field Office has the authority to suspend a generator's certification to ship TRU mixed waste to the WIPP facility should the generator fail to meet this requirement. The containers will be certified free of surface contamination above DOE limits upon shipment. This condition shall be verified upon receipt of the waste at WIPP. The level of rigor applied in these areas to ensure container integrity and the absence of external contamination on both ends of the transportation process will ensure that waste containers entering the waste management process line at WIPP meet the applicable Resource Conservation and Recovery Act (**RCRA**) requirements for container condition.

Contact handled (**CH**) TRU mixed waste containers will be either 55-gal (208-L) drums singly or arranged into 7-packs, 85-gal (321-L) drums singly or arranged into 4-packs, 100-gal (379 L) drums singly or arranged into 3-packs, ten-drum overpacks (**TDOP**), or SWBs. A summary description of each container type is provided below.

Standard 55-Gallon Drums

Standard 55-gal (208-L) drums meet the requirements for U.S. Department of Transportation (**DOT**) specification 7A regulations.

A standard 55-gal (208-L) drum has a gross internal volume of 7.4 cubic feet (ft³) (0.210 cubic meters (m³)). Figure M1-3 shows a standard TRU mixed waste drum. One or more filtered vents (as described in Section M1-1d(1)) will be installed in the drum lid to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.

Standard 55-gal (208-L) drums are constructed of mild steel and may also contain rigid, molded polyethylene (or other compatible material) liners. These liners are procured to a specification describing the functional requirements of fitting inside the drum, material thickness and tolerances, and quality controls and required testing. A quality assurance surveillance program is applied to all procurements to verify that the liners meet the specification.

Standard 55-gal (208-L) drums may be used to collect derived waste.

Standard Waste Boxes

The SWBs meet all the requirements of DOT specification 7A regulations.

One or more filtered vents (as described in Section M1-1d(1)) will be installed in the SWB body and located near the top of the SWB to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization. They have an internal volume of 66.3 ft³ (1.88 m³). Figure M1-4 shows a SWB.

The SWB is the largest container that may be used to collect derived waste.

Ten-Drum Overpack

The TDOP is a metal container, similar to a SWB, that meets DOT specification 7A and is certified to be noncombustible and to meet all applicable requirements for Type A packaging. The TDOP is a welded-steel, right circular cylinder, approximately 74 inches (in.) (1.9 meters (m)) high and 71 in. (1.8 m) in diameter (Figure M1-5). The maximum loaded weight of a TDOP is 6,700 pounds (lbs) (3,040 kilograms (kg)). A bolted lid on one end is removable; sealing is accomplished by clamping a neoprene gasket between

the lid and the body. One or more filter vents are located near the top of the TDOP on the body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization. A TDOP may contain up to ten standard 55-gal (208-L) drums or one SWB. TDOPs may be used to overpack drums or SWBs containing CH TRU mixed waste. The TDOP may also be direct loaded with CH TRU mixed waste. Figure M1-5 shows a TDOP.

Eighty-Five Gallon Drum Overpack

The 85-gal (321-L) drums meet the requirements for DOT specification 7A regulations. One or more filtered vents (as described in Section M1-1d(1)) will be installed in the 85-gal drum ~~overpack~~ lid to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.

85-gal (321-L) drums are constructed of mild steel and may also contain rigid, molded polyethylene (or other compatible material) liners. These liners are procured to a specification describing the functional requirements of fitting inside the drum, material thickness and tolerances, and quality controls and required testing. A quality assurance surveillance program is applied to all procurements to verify that the liners meet the specification.

The 85-gal (321-L) drum ~~overpack~~, which is shown in Figure M1-6, will be used primarily for overpacking contaminated 55-gal (208 L) drums at the WIPP facility. The 85-gal drum may also be direct loaded with CH TRU mixed waste.

85-gal (321-L) drums may be used to collect derived waste.

100-Gallon Drum

100-gal (379-L) drums meet the requirements for DOT specification 7A regulations.

A 100-gal (379-L) drum has a gross internal volume of 13.4 ft³ (0.38 m³). One or more filtered vents (as described in Section M1-1d(1)) will be installed in the drum lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.

100-gal (379-L) drums are constructed of mild steel and may also contain rigid, molded polyethylene (or other compatible material) liners. These liners are procured to a specification describing the functional requirements of fitting inside the drum, material thickness and tolerances, and quality controls and required testing. A quality assurance surveillance program is applied to all procurements to verify that the liners meet the specification.

100-gal (379-L) drums may be direct loaded.

Container Compatibility

All containers will be made of steel, and some will contain rigid, molded polyethylene liners. The compatibility study, documented in Appendix C1 of the WIPP RCRA Part B Permit Application (DOE, 1997a), included container materials to assure containers are compatible with the waste. Therefore, these containers meet the requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.172).

g.3. Permit Attachment M1, Section M1-1c(1)

Upon receipt and removal of CH TRU mixed waste containers from the TRUPACT-IIs, the waste containers are required to be in good condition as provided in Permit Module III. The waste containers will be visually inspected for physical damage (severe rusting, apparent structural defects, signs of pressurization, etc.) and leakage to ensure they are good condition prior to storage. Waste containers will also be checked for external surface contamination. If a primary waste container is not in good condition, the Permittees will overpack the container, repair/patch the container, or transfer the contents to a container in good condition. The Permittees may initiate local decontamination, return unacceptable containers to a DOE generator site or send the TRUPACT-II to the third party contractor. Decontamination activities will not be conducted on containers which are not in good condition, or which are leaking. If local decontamination activities are opted for, the work will be conducted in the WHB Unit on the TRUDOCK. These processes are described in Section M1-1d. The area previously designated as the Overpack and Repair Room will not be used for TRU mixed waste management in any instances.

Once unloaded from the TRUPACT-IIs, CH TRU mixed waste containers (7-packs, 3-packs, 4-packs, SWBs, or TDOPs) are placed in one of two positions on the facility pallet. The waste containers ~~7-packs or SWBs~~ are stacked, as they arrive in the TRUPACT-II, on the facility pallets (one- or two-high, depending on weight considerations). The use of facility pallets will elevate the waste approximately 9.5 in. (24 cm) from the floor surface. Pallets of waste will then be relocated to the Northeast (**NE**) Storage Area of the WHB Unit for normal storage. This NE Storage Area, which is shown in Figure M1-7, will be clearly marked to indicate the lateral limits of the storage area. This NE Storage Area will have a maximum capacity of seven pallets (1,856 ft³ [52.6 m³]) of TRU mixed waste containers during normal operations. These pallets will typically be staged in this area for a period of up to five days.

In addition, four TRUPACT-IIs, containing up to eight 7-packs, 3-packs, 4-packs, or SWBs or four TDOPs, may occupy the staging positions at the TRUDOCK Storage Area of the WHB Unit. If waste containers are left in this area, they will be in the TRUPACT-II shipping container with or without the shipping container lids removed. The volume of waste in containers in four TRUPACT-IIs is 530.4 ft³ (15 m³).

TRUPACT-II Type B Shipping Containers

The TRUPACT-II (Figure M1-8) is a double-contained cylindrical shipping container 8 ft (2.4 m) in diameter and 10 ft (3 m) high. It meets DOT Type B shipping container requirements and has successfully completed rigorous container-integrity tests. The payload consists of approximately 7,265 lbs (3,300 kg) gross weight in up to fourteen 55-gal (208-L) drums, eight 85-gal (322-L) drums, six 100-gal (379-L) drums, two SWBs, or one TDOP.

Facility Pallets

The facility pallet is a fabricated steel unit designed to support 7-packs, 4-packs, or 3-packs of drums, SWBs, or TDOPs, ~~or groups of overpack drums,~~ and has a rated load of 25,000 lbs. (11,430 kg). The facility pallet will accommodate up to four 7-packs, four 3-packs, or four 4-packs of drums or four SWBs (in two stacks of two units), two TDOPs, ~~two groups of overpack drums (maximum of four drums per group),~~ or any combination thereof. Loads are secured to the facility pallet during transport to the emplacement area. Facility pallets are shown in Figure M1-10. Fork pockets in the side of the pallet allow the facility pallet to be lifted and transferred by forklift to prevent direct contact between TRU mixed waste containers and forklift tines. This arrangement reduces the potential for puncture accidents. WIPP facility operational documents define the operational load of the facility pallet as the contents of two TRUPACT-IIs. Since the maximum TRUPACT-II load is 7,265 lbs (3,300 kg), the maximum weight of a loaded facility pallet is less than 19,000 lbs (8,630 kg), including the pallet weight.

g.4. Permit Attachment M1, Section M1-1d(1)

The Safety Analysis Report (DOE 1997b) for packaging requires the lids of TRU mixed waste containers to be vented through high efficiency particulate air (**HEPA**)-grade filters to preclude container pressurization caused by gas generation and to prevent particulate material from escaping. Filtered vents used in CH TRU mixed waste containers (55-gal (208-L) drums, 85-gal (321 L) drums, 100-gal (379-L) drums, TDOPs, and SWBs) have an orifice approximately 0.375-in. (9.53-millimeters) in diameter through which internally generated gas may pass. The filter media can be any material (e.g., composite carbon, sintered metal).

g.5. Permit Attachment M1, Section M1-1d(2)

Under normal operations, it is not expected that the waste containers will be externally contaminated or that removable surface contamination on the shipping package or the waste containers will be in excess of the DOE's free release limits (i.e., < 20 disintegrations per minute (dpm) per 100 cm² alpha or < 200 dpm per 100 cm² beta/gamma). In such a case, no further decontamination action is needed. The shipping package and waste container will be handled through the normal process. However, should the magnitude of contamination exceed the free release limits, yet still

fall within the criteria for small area “spot” decontamination (i.e., less than or equal to 100 times the free release limit and less than or equal to 6 ft² [0.56 m²]), the shipping package or the waste container will be decontaminated. Decontamination activities will not be conducted on containers which are not in good condition, or containers which are leaking. Containers which are not in good condition, and containers which are leaking, will be overpacked, repair/patch the container, or transfer the contents to a container in good condition. In addition, if during the waste handling process at the WIPP a waste container is breached, it will be overpacked, repair/patch the container, or transfer the contents to a container in good condition. Should WIPP structures or equipment become contaminated, waste handling operations in the affected area will be immediately suspended.

The TRUPACT-II may hold up to two 7-packs, two 4-packs, two 3-packs, two SWBs, or one TDOP. An overhead bridge crane will be used to remove the contents of the TRUPACT-II and place them on a facility pallet. The containers will be visually inspected for physical damage (severe rusting, apparent structural defects, signs of pressurization, etc.) and leakage to ensure they are in good condition prior to storage. Waste containers will also be checked for external surface contamination. If a primary waste container is not in good condition, the Permittees will overpack the container, repair/patch the container, or transfer the contents to a container in good condition.

For inventory control purposes, TRU mixed waste container identification numbers will be verified against the Uniform Hazardous Waste Manifest and the WWIS. Inconsistencies will be resolved with the generator before TRU mixed waste is emplaced. Discrepancies that are not resolved within 15 days will be reported to the NMED in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.72).

Each facility pallet has two recessed pockets to accommodate two sets of 7-packs, two sets of 4-packs, two sets of 3-packs, or two SWBs stacked two-high, two TDOPs, or any combination thereof. Each stack of waste containers will be secured prior to transport underground (see Figure M1-10). A forklift will transport the loaded facility pallet to the conveyance loading car inside the conveyance loading room located adjacent to the Waste Shaft. The conveyance loading room serves as an air lock between the CH Bay and the Waste Hoist Shaft, preventing excessive air flow between the two areas. The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed off. Containers of CH TRU waste (55-gal (208 L) drums, SWBs, 85-gal (321 L) drums, 100-gal (379-L) drums, and TDOPs) can be handled individually, if needed, using the forklift and lifting attachments (i.e., drum handlers, parrot beaks).

g.6. Permit Attachment M1, Section M1-1e(1)

The ~~7-packs and SWBs~~ waste containers in storage will be visually inspected prior to each movement and, at a minimum, weekly, to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. Waste containers will be visually inspected for physical damage (severe rusting, apparent structural defects, signs of pressurization, etc.) and leakage. If a primary waste container is not in good condition, the Permittees will overpack the container, repair/patch the container, or transfer the contents to a container in good condition. This visual inspection shall not include the center drums of 7-packs and waste containers positioned such that visual observation is precluded due to the arrangement of waste assemblies on the facility pallets. If waste handling operations should stop for any reason with containers located in the TRUDOCK Storage Area in the TRUPACT-II shipping containers, primary waste container inspections will not be accomplished until the containers of waste are removed from the TRUPACT-II. If the lid to the TRUPACT-II inner container vessel is removed, radiological checks (swipes of TRUPACT-II inner surfaces) will be used to determine if there is contamination within the TRUPACT-II. Such contamination could indicate a waste container leak or spill. Using radiological surveys, a detected spill or leak of a radioactive contamination from a waste container will also be assumed to be a hazardous waste spill or release.

Inspections of the Shielded Storage Area designated for holding waste while manifest discrepancies are resolved, are performed prior to use and weekly thereafter, so long as waste containers reside in the Shielded Storage Area. Waste containers residing within a TRUPACT-II are not inspected, as described in the first bullet in Section M1-1e(2).

g.7. Permit Attachment M1, Figure M1-6

Figure M1-6 is shown in Attachment B.

g.8. Permit Attachment M1, Figure M1-15

Figure M1-15 is shown in Attachment B.

g.9. Permit Attachment M1, Table M1-2

TABLE M1-2
WASTE HANDLING EQUIPMENT CAPACITIES

CAPACITIES FOR EQUIPMENT	
CH Bay overhead bridge crane	12,000 lbs.
CH Bay forklifts	26,000 lbs.
Facility Pallet	25,000 lbs.
Adjustable center-of-gravity lift fixture	10,000 lbs.

Conveyance Loading Car	70,000 lbs.
MAXIMUM GROSS WEIGHTS OF CONTAINERS	
Seven-pack of 55-gallon drums	7,000 lbs.
Four-pack of 85-gallon drums	4,500 lbs.
<u>Three-pack of 100-gallon drums</u>	<u>3,000 lbs.</u>
Ten-drum overpack	6,700 lbs.
Standard waste box	4,000 lbs.
MAXIMUM NET EMPTY WEIGHTS OF EQUIPMENT	
TRUPACT-II	13,140 lbs.
Adjustable center of gravity lift fixture	2,500 lbs.
Facility pallet	4,120 lbs.

h.1. Permit Attachment M2, Section M2-2a(1)

Facility Pallets

The facility pallet is a fabricated steel unit designed to support 7-packs, 3-packs, or 4-packs of drums, SWBs, or ten-drum overpacks (TDOPs), ~~or groups of overpack drums~~, and has a rated load of 25,000 pounds (lbs.) (11,430 kilograms (kg)). The facility pallet will accommodate up to four 7-packs, four 3-packs, or four 4-packs of drums or four SWBs (in two stacks of two units), or two TDOPs, ~~or two groups of overpack drums (maximum of four drums per group)~~. Loads are secured to the facility pallet during transport to the emplacement area. Facility pallets are shown in Figure M2-3. Fork pockets in the side of the pallet allow the facility pallet to be lifted and transferred by forklift to prevent direct contact between TRU mixed waste containers and forklift tines. This arrangement reduces the potential for puncture accidents. WIPP facility operational documents define the operational load of the facility pallet as the contents of two Transuranic Package Transporter, Type IIs (**TRUPACT-IIs**). Since the maximum TRUPACT-II load is 7,265 lbs (3,300 kg), the maximum weight of a loaded facility pallet is less than 19,000 lbs (8,630 kg), including the pallet weight.

h.2. Permit Attachment M2, Section M2-2b

CH TRU mixed waste containers will arrive by tractor-trailer at the WIPP facility in sealed shipping containers (i.e., TRUPACT-IIs), at which time they will undergo security and radiological checks and shipping documentation reviews. The trailers carrying the shipping containers will be stored temporarily at the Parking Area Container Storage Unit (Parking Area Unit). A forklift will remove the TRUPACT-IIs from the transport trailers and will transport them into the Waste Handling Building Container Storage Unit for unloading of the waste containers. Each TRUPACT-II may hold up to two 7-packs, two 4-packs, two 3-packs, two SWBs, or one TDOP. An overhead bridge crane will be used to remove the waste containers from the TRUPACT-II and place them on a facility

pallet. Each facility pallet has two recessed pockets to accommodate two sets of 7-packs, two sets of 3-packs, two sets of 4-packs or two SWBs stacked two-high, or two TDOPs. Each stack of waste containers will be secured prior to transport underground (see Figure M2-3). A forklift will transport the loaded facility pallet to the conveyance loading car inside the conveyance loading room adjacent to the Waste Shaft. The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed off. Containers of CH TRU waste (55-gal (208 L) drums, SWBs, 85-gal (321 L) drums, 100-gal (379 L) drums, and TDOPs) can be handled individually, if needed, using the forklift and lifting attachments (i.e., drum handlers, parrot beaks).

~~Because of the~~ The emplacement of CH TRU mixed waste into the HWDUs will typically be in the order received and unloaded from the TRUPACT-IIs, ~~7-packs of drums, SWBs, TDOPs, and 85-gal (321-L) overpack containers will be emplaced as they arrive (except that 85-gal (321-L) overpacks will only be placed on the top row in the repository).~~ There is no specification for the amount of space to be maintained between the waste containers themselves, or between the waste containers and the walls. Containers will be stacked in the best manner to provide stability for the stack (which is up to three containers high) and to make best use of available space. It is anticipated that the space between the wall and the container could be from 8 to 18 in. (20 to 46 cm). This space is a function of disposal room wall irregularities, container type, and sequence of emplacement. Bags of backfill will occupy some of this space. Space is required over the stacks of containers to assure adequate ventilation for waste handling operations. A minimum of 16 in. (41 cm) was specified in the Final Design Validation Report (Appendix D1, Chapter 12 of the WIPP RCRA Part B Permit Application (DOE, 1997)) to maintain air flow. Typically, the space above a stack of containers will be 36 to 48 in. (90 to 122 cm). However 18 in. (0.45 m) will contain backfill material consisting of bags of Magnesium Oxide (MgO). Figure M2-8 shows a typical container configuration, although this figure does not mix containers on any row. Such mixing, while inefficient, will be allowed to assure timely movement of waste into the underground. No aisle space will be maintained for personnel access to emplaced waste containers. No roof maintenance behind stacks of waste is planned.

h.3. Permit Attachment M2, Table M2-1

CAPACITIES FOR EQUIPMENT	
Facility Pallet	25,000 lbs.
Conveyance Loading Car	36,000 lbs.
Underground transporter	28,000 lbs.
Underground fork lift	12,000 lbs.
MAXIMUM GROSS WEIGHTS OF CONTAINERS	
Seven-pack of 55-gallon drums	7,000 lbs.
Four-pack of 85-gallon drums	4,500 lbs.
<u>Three-pack of 100-gallon drums</u>	<u>3,000 lbs.</u>
Ten-drum overpack	6,700 lbs.
Standard waste box	4,000 lbs.
MAXIMUM NET EMPTY WEIGHTS OF EQUIPMENT	
TRUPACT-II	13,140 lbs.
Facility pallet	4,120 lbs.

Attachment B

Figure M1-6

85-Gallon Drum

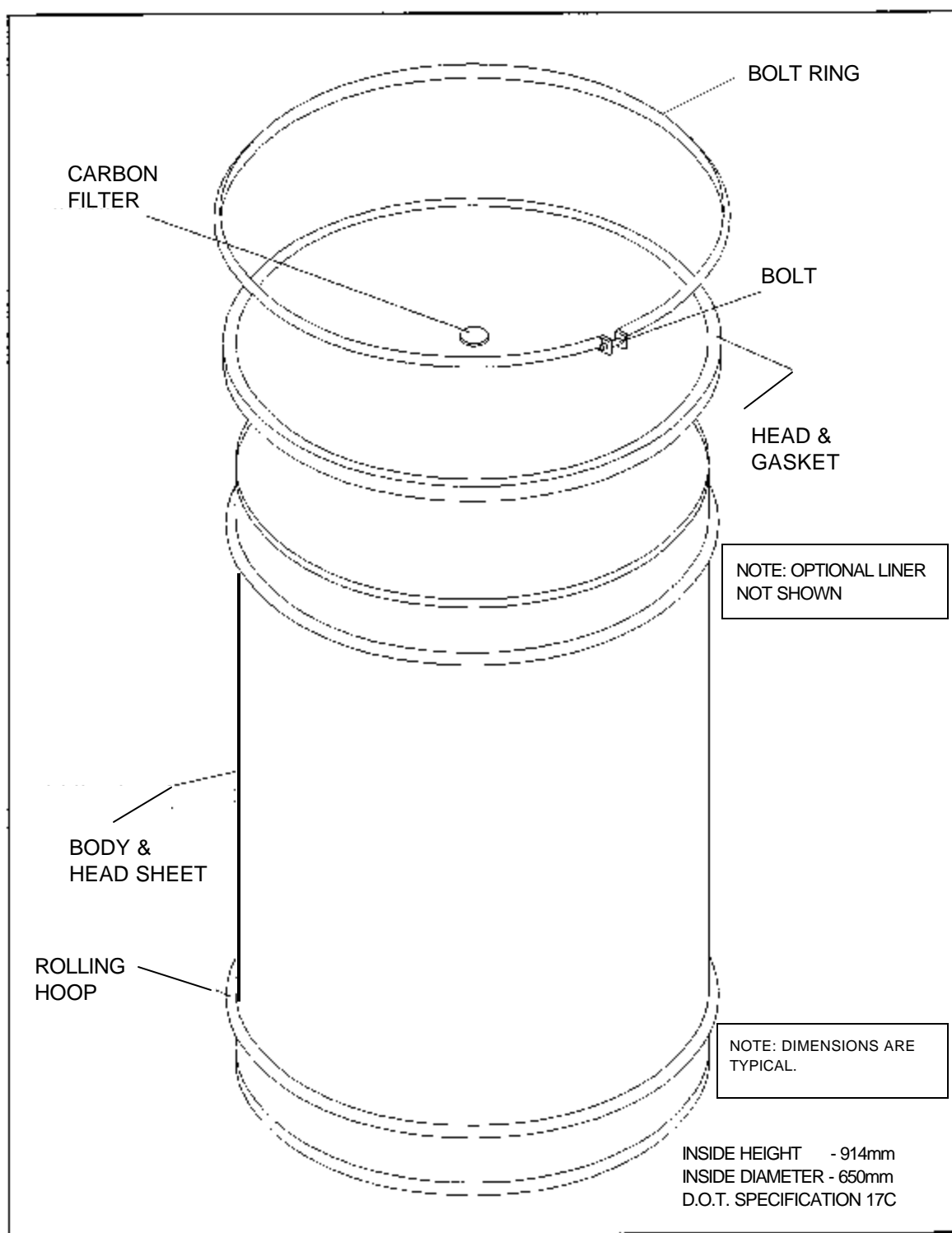


Figure M1-6
85-Gallon Overpack Drum

Figure M1-15
100-Gallon Drum

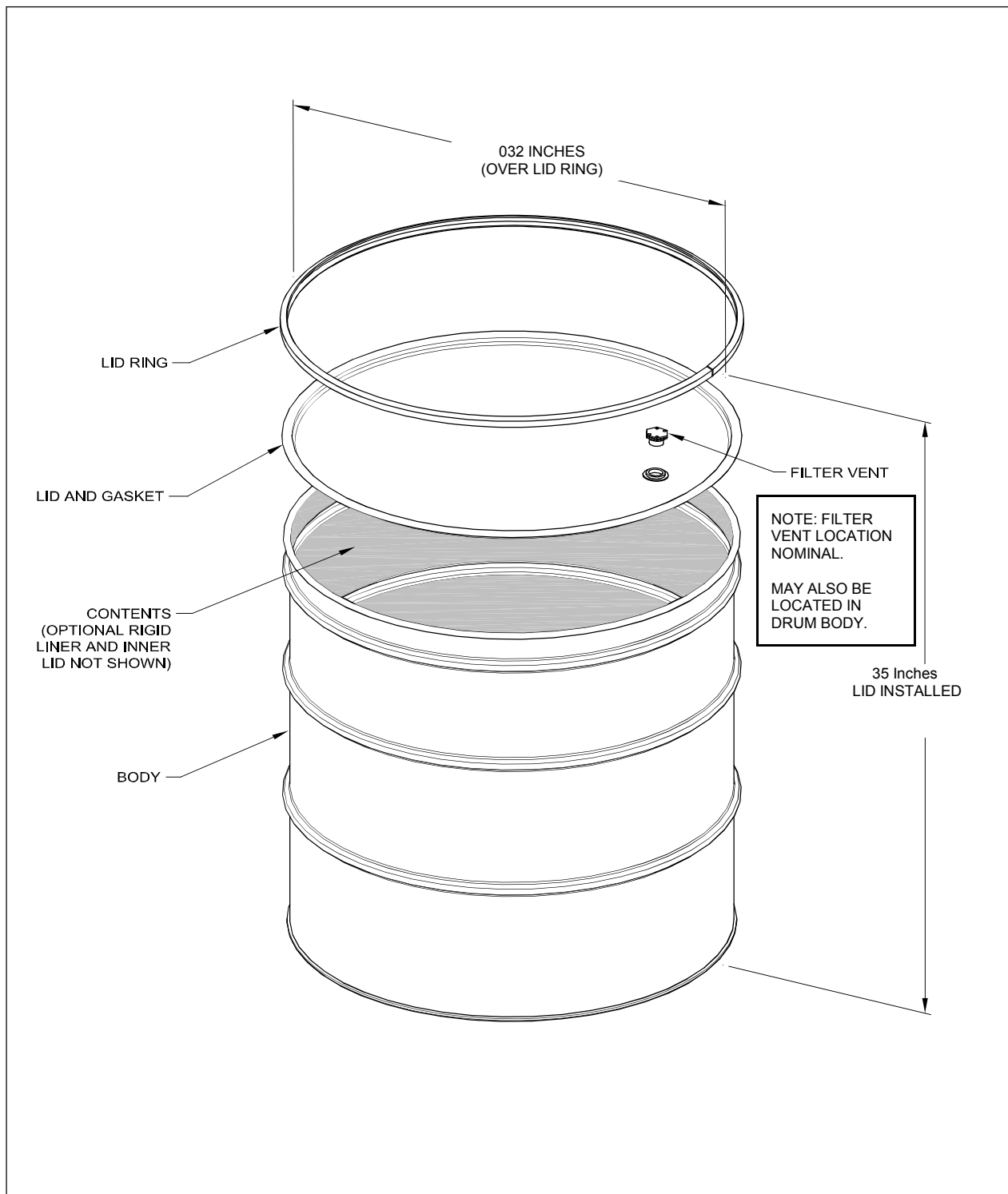


Figure M1-15
100-Gallon Drum